Technical Review and Evaluation of the Application for Air Quality
Significant Permit Revision #46893 to Operating Permit #38400

I. INTRODUCTION

This significant permit revision for BHP Copper, Inc. Pinto Valley Unit, the Permittee, authorizes the company to operate a 650 standard cubic feet per minute moly dryer wet scrubber, two 420,000 British thermal units per horsepower cathode tank heaters, three 100,000 British thermal units per hour space heaters, 740,000 British thermal units per hour hot water heater, 58 horsepower generator, 251 horsepower generator, 172 horsepower generator, 42 horsepower generator, 335 horsepower generator, 34 horsepower generator, 34 horsepower generator, 34 horsepower generator, 340 horsepower generator, 322 horsepower pump, 275 horsepower pump, 52 horsepower pump, 9 horsepower power washer, and a 7.5 horsepower power washer. These changes are to be undertaken at the BHP Copper, Inc. Pinto Valley Operations located at Pinto Valley, 8 miles west of Miami, Arizona off Highway 60.

In addition, the Arizona Department of Environmental Quality (ADEQ) has determined that the New Source Performance for Stationary Compression Ignition Internal Combustion Engines (NSPS Subpart IIII) apply to some of the equipment at the facility and the permit is being revised to reflect this determination.

This significant permit revision for BHP Copper, Inc. Pinto Valley Unit results in the following changes to Operating Permit No. 38400:

1. Addition of a Moly Dryer Wet Scrubber, three Space Heaters, Hot Water Heater, two Cathode Wash Tank Heaters, #4 Dam West Generator, #4 Dam Middle Generator, #4 Dam East Generator, Pump-Mill Fire Water-Slurry Pump House, Tule Pond Pump, Upper Catchment Pump, Baker Pond Pump, North Barn Power Washer with engine, Truck Wash Power Washer with engine, four Air Compressors, and a Prill Silo.
2. Condition V in Attachment “B” has been amended to limit the hours of operation of each engine to no more then 400 hours in any rolling 12-months period to keep potential emissions below major source thresholds and has been amended to include Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Additionally, engines subject to Standards of Performance for Stationary Compression Ignition Internal Combustion Engines are limited to 100 hours of maintenance and testing as part of the total 400 hours in any rolling 12-month period.
3. Condition IX in Attachment “B” for Gasoline Storage Tanks has been included.
4. Deletion of Miscellaneous Storage Tanks from Attachment “C” of the Equipment List due to following insignificant activity determination in accordance with A.A.C R18-2-101(57).

The addition of the above mentioned equipment meets the requirements of Arizona Administrative Code (A.A.C.) R18-2-320.B and as such necessitates this significant permit revision.

II. EMISSIONS

The facility has potential to emit, without controls, more than 100 tons per year (tpy) of particulate matter and nitrogen oxides emissions. The Permittee is accepting voluntary emission

and operating limits, and air pollution control requirements to stay below major source threshold. Therefore, a synthetic minor Class II permit is required under Arizona Administrative Code (A.A.C.) R18-2-302.B.2.a.iii.

The potential emissions from the additional equipment and the new PTE of the entire facility are summarized in Table 1.

Table 1: Net Potential Emissions Resulting from Significant Revision and new PTE of Entire Facility

Pollutant	PTE of Revision (tons per year)	PTE of Entire Facility Prior to Revision (tons per year)	New PTE of Entire Facility (tons per year)
CO	+11.83	1.45	13.28
NO_x	+83.22	6.52	89.74
SO_2	+0.54	7.19	7.73
VOCs	+3.27	31.61	34.88
PM_{10}	+2.66	87.03	89.69

Notes:
1- The PTE of the Prill Silo is based on the AP-42 Table 11.19.2-4 Emission Factors for Pulverized Mineral Processing Operations.
2- The PTE of the propane fueled heaters are based on AP-42 Table 1.5-1 Commercial Boilers.
3- The PTE of the internal combustion units are based on AP-2 Table 3.3 Stationary Internal Combustion Sources.
4. The PTE of the facility prior to this significant revision is based on the TSD of Permit #38400.

III. APPLICABLE REGULATIONS

The applicable regulations were identified by the agency as part of the application review. If necessary, the source is required to list any additional regulations that may be applicable. Table 2 displays the applicable requirements for each piece of equipment under this proposed significant revision.

Table 2: Verification of Applicable Regulations

Unit	Control Device	Rule	Verification
Fuel Burning Equipment	Not Applicable	A.A.C. R18-2-724.C.1 A.A.C. R18-2-724.B A.A.C. R18-2-724.E A.A.C. R18-2-724.J	The PM, Opacity, and Sulfur Dioxide limits from A.A.C. R18-2-724 apply to fossil fuel fired equipment
Internal Combustion Engines (Non-NSPS Applicable)	Not Applicable	A.A.C. R18-2-719.B A.A.C. R18-2-719.C.1 A.A.C. R18-2-719.E A.A.C. R18-2-719.F A.A.C. R18-2-719.H A.A.C. R18-2-719.I A.A.C. R18-2-719.J	The PM, Opacity, and Sulfur Dioxide limits from A.A.C. R18-2-719 apply to internal combustion engines not subject to NSPS
Internal Combustion Engines (NSPS Applicable)	Not Applicable	40 CFR 60.4206 40 CFR 60.4211(a)	The PM, Nitrogen Oxides and Non-

Unit	Control Device	Rule	Verification
		40 CFR 60.4211(c) 40 CFR 60.4211(e) 40 CFR 1068.101(b)(1)(i) 40 CFR 1068.101(b)(1)(ii) 40 CFR 1068.101(b)(2) 40 CFR 1068.120 40 CFR 60.4207(a) 40 CFR 60.4207(b) 40 CFR 60.4205(b)	Methane Hydrocarbons, and Carbon Monoxide limits from 40 CFR 60 Subpart IIII apply to internal combustion engines with a manufacture date of 2007 or later.
Gasoline Storage Tank	Submerged filling device	A.A.C. R18-2-710.B A.A.C. R18-2-710.D A.A.C. R18-2-710.E	VOC emission prevention per Standards of Performance for Existing Storage Vessels for Petroleum Liquids

IV. Insignificant Activity Determinations for Miscellaneous Storage Tanks

Tank description	Size/Volume	Unit ID/Serial Number	Justification
Backwash Tank-SXEW Circuit	12,700 gal	103-TK-06	A.A.C. R18-2-101(57)(j)
Liquid Propane Tank-SXEW Circuit	1,200 gal	107-TK-01 (145140)	A.A.C. R18-2-101(57)(j)
EW Wash Tank	2,087	105TK01	A.A.C. R18-2-101(57)(j)
Plant/Fire Water Tank	105,700 gal	101TK01	A.A.C. R18-2-101(57)(j)
Domestic Water Tank	10,200 gal	101TK02	A.A.C. R18-2-101(57)(j)
Antifreeze Tank PVU Grease Pit	525 gal	12TK01	A.A.C. R18-2-101(57)(j)
Solvent Tank-PVU Grease Pit	350 gal	12TK02	A.A.C. R18-2-101(57)(j)
Grease Tank-PVU Grease Pit	10,000 gal	12PFG01	A.A.C. R18-2-101(57)(j)
Xanthate Tank-PVU Reagent Bldg	1,700 gal	41TK16	A.A.C. R18-2-101(57)(j)
Xanthate Tank-PVU Reagent Bldg	9,000 gal	41TK09	A.A.C. R18-2-101(57)(j)
Aerofloat Tank PVU Reagent Bldg	9,000 gal	41TK07	A.A.C. R18-2-101(57)(j)
Caustic Soda Tank PVU Reagent Bldg	6,000 gal	41TK11	A.A.C. R18-2-101(57)(j)
Caustic Soda Tank PVU Reagent Bldg	9,000 gal	41TK08	A.A.C. R18-2-101(57)(j)
Dowfroth Tank Mill Top Floor	500 gal	33TK03	A.A.C. R18-2-101(57)(j)
Froth Tank-PVU Mill Top Floor	500 gal	33TK01	A.A.C. R18-2-101(57)(j)
Holding Tank PVU Mill Top Floor	500 gal	33TK04	A.A.C. R18-2-101(57)(j)
Moly Collector Tank-PVU Mill Top Floor	500 gal	33TK06	A.A.C. R18-101 (57)(c)
Cu/moly Concentrate Tanks PVU Moly Mill	520,000 gal ea	33TK06 33TK07	A.A.C. R18-2-101(57)(j)
Floc 852 Tank PVU Tailing Thickeners	6,500 gal	51TK05	A.A.C. R18-2-101(57)(j)
Floc Tank PVU Tailing Thickeners	5,000 gal	51TK04	A.A.C. R18-2-101(57)(j)

Tank description	Size/Volume	Unit ID/Serial Number	Justification
Copper Concentrate Tanks PVU Copper Thickener	520,000 gal ea	34TK01 34TK02	A.A.C. R18-2-101(57)(j)
Moly Thickener	8ft high x 50ft dia	35TK08	A.A.C. R18-2-101(57)(j)
Moly Storage Tank	50,000 gal	35TK03	A.A.C. R18-2-101(57)(j)
Final Product Thickener PVU Mill	30,000 gal	35TK09	A.A.C. R18-2-101(57)(j)
Milk of Lime Tanks PVU Lime Plant, 2 Each	100,000 gal ea	41TK01 41TK02	A.A.C. R18-2-101(57)(j)
Oreprysx Tank PVU Reagent Bldg	9,000 gal	41TK05	A.A.C. R18-2-101(57)(j)
CY7025 Tank PVU Reagent Bldg	9,000 gal	41TK03	A.A.C. R18-2-101(57)(j)
Slurry Tanks PVU Slurry Pump house, 2 Each	265,000 GAL	61TK01 61TK02	A.A.C. R18-2-101(57)(j)
PVU Tailings Thickeners, 3 Each	9 million gallons each	51TK 01,02 AND 03	A.A.C. R18-2-101(57)(j)
Liquid Propane Tank PVU Shop Site	1,000 gal	LPG-02	A.A.C. R18-2-101(57)(j)
Diesel Fuel	2,000 gal	OA-DF-01	A.A.C. R18-101 (57)(c)
Diesel Fuel	10,000 gal	FS-DF-01	A.A.C. R18-101 (57)(c)
Used Oil	3,000 gal	FS-WO-01	A.A.C. R18-2-101(57)(j))
Red Diesel Fuel	20,000 gal	Diesel #04	A.A.C. R18-101 (57)(c)
Diesel Fuel	350 gal	PH-DF-01	A.A.C. R18-101 (57)(c)
Diesel Fuel	300 gal	TW-DF-01	A.A.C. R18-101 (57)(c)
Grease	10,000 gal	PGF	A.A.C. R18-2-101(57)(j)
Diesel Fuel	1,000 gal	1 Caisson	A.A.C. R18-101 (57)(c)
Diesel Fuel	200 gal	Kohler 681	A.A.C. R18-101 (57)(c)
Diesel Fuel	200 gal	Kohler 680	A.A.C. R18-101 (57)(c)
Diesel Fuel	75 gal	GS 682	A.A.C. R18-101 (57)(c)
Diesel Fuel	200 gal	Spectrum 884	A.A.C. R18-101 (57)(c)
Diesel Fuel	200 gal	Pump 670	A.A.C. R18-101 (57)(c)
Water Tank PVU RO	525 gal	71TK10	A.A.C. R18-2-101(57)(j)
Water Tank PVU RO	500 gal	71TK18	A.A.C. R18-2-101(57)(j)

Tank description	Size/Volume	Unit ID/Serial Number	Justification
Service Water Tanks, 2 Each	500,000 gal ea	71TK06 71TK07	A.A.C. R18-2-101(57)(j)
Mill Water Tanks, 2 Each	1 million gal ea	71TK04 71TK05	A.A.C. R18-2-101(57)(j)
Service/fire Water Tank	676,000 gal	71TK09	A.A.C. R18-2-101(57)(j)
Potable Water Tank	10,000 gal	71TK08	A.A.C. R18-2-101(57)(j)
North Barn TC-50 Lube	10,000 gal	GPLO-3	A.A.C. R18-2-101(57)(j)
North Barn 15/40 Oil	10,000 gal	GPLO02	A.A.C. R18-2-101(57)(j)
North Barn 50 wt Oil	10,000 gal	GPLO01	A.A.C. R18-2-101(57)(j)
North Barn Lube Oil	500 gal	GPLO04	A.A.C. R18-2-101(57)(j)
North Barn 85/140 Gear Lube	500 gal	GPLO05	A.A.C. R18-2-101(57)(j)
North Barn Waste Oil	5,000 gal	GPWO01	A.A.C. R18-2-101(57)(j)
North Barn Rotella 50 wt Oil	2,000 gal	2KSK004	A.A.C. R18-2-101(57)(j)
Diesel Fuel, Fine Crusher	10,000 gal	FCDF01	A.A.C. R18-101 (57)(c)
Diesel Fuel, Mill Change Room	2,000 gal	MADF01	A.A.C. R18-101 (57)(c)
Diesel Fuel, Primary Crusher	20,000 gal	Diesel No. 02	A.A.C. R18-101 (57)(c)
Diesel Fuel, Grease Pit Truck Wash	300 gal	GPDF01	A.A.C. R18-101 (57)(c)
Lube Oil, Area 1A	10,000 gal	1ALO01	A.A.C. R18-2-101(57)(j)
Lube Oil, Fine Crusher	15,000 gal	FCP Oil	A.A.C. R18-2-101(57)(j)
Lube Oil, Primary Crusher	2,000 gal	PC Lube Oils	A.A.C. R18-2-101(57)(j)
Lube Oil, Grease Pit	2,000 gal	2KSK004	A.A.C. R18-2-101(57)(j)
Used Oil, Fine Crusher	2,000 gal	FCP Waste Oil	A.A.C. R18-2-101(57)(j)
Used Oil, Mill Change Room	3,000 gal	MAWO01	A.A.C. R18-2-101(57)(j)
Solvent	350 gal	GP Solvent	A.A.C. R18-2-101(57)(j)
Propane	250 gal	6659	A.A.C. R18-2-101(57)(j)

V. Monitoring Requirements

A. Fuel Burning Equipment

A certified EPA Reference Method 9 observer shall conduct a monthly survey of visible emissions emanating from the boilers and heaters. If the opacity of the emissions observed appears to exceed the standard, the observer shall conduct a certified EPA Reference Method 9 observation. The Permittee shall keep records of the initial survey and any EPA Reference Method 9 observations performed. These records shall include the emission point observed, location of observer, name of observer, date and time of observation, and the results of the observation.

B. Internal Combustion Engines

The Permittee shall keep records of monthly totals of the hours of operation of each internal combustion engine. At the end of each month, the Permittee shall calculate and record a rolling 12-month total of the hours of operation.

C. Gasoline Storage Tank

The Permittee is required to keep a record of the typical Reid vapor pressure of the tanks, dates of storage in the gasoline tank, and when the gasoline tank is empty.

VI. LIST OF ABBREVIATIONS

AAC	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
MMBtu/hr	Million British Thermal Units per Hour
NAAQS:	National Ambient Air Quality Standards
NO_x	Nitrogen Oxides
NSPS:	New Source Performance Standards
PM	Particulate Matter
PM_{10}	Particulate Matter with an Aerodynamic Diameter of less than 10 microns
PTE	Potential to Emit
SO_2	Sulfur Dioxide
SCFM	Standard Cubic Feet per Minute
VOC:	Volatile Organic Compounds